(No Model.)

A. R. TIFFANY.

SCREW JACK.

No. 313,967. Patented Mar. 17, 1885.

Fig. 1.

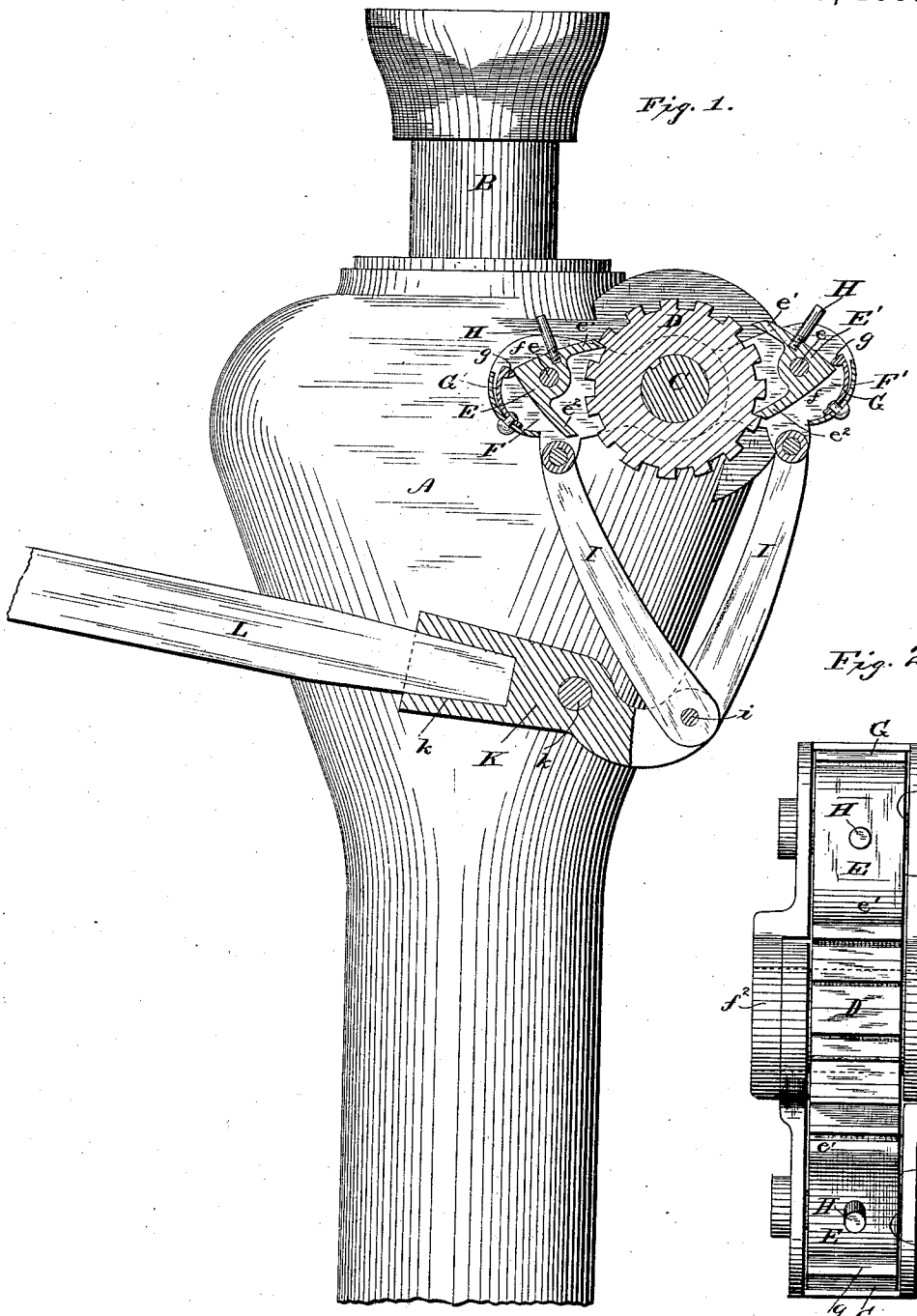


Fig. 2.

WITNESSES

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ALBERT R. TIFFANY, OF DAYTON, OHIO, ASSIGNOR OF THREE-FOURTHS TO MICHAEL NEIL AND JOHN J. LELAND, BOTH OF SAME PLACE.

SCREW-JACK.

SPECIFICATION forming part of Letters Patent No. 313,967, dated March 17, 1885.

Application filed February 12, 1885. (No model.)

To all whom it may concern:

Be it known that I, ALBERT R. TIFFANY, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Screw-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention relates, particularly, to that class of screw-jacks in which motion is imparted to the screw-stem or lifting-bar by means of a worm-gear mounted upon a revolving shaft; and it consists in certain improved means whereby the worm-shaft is adapted to be conveniently revolved in either direction, so as to raise or lower the lifting-bar at the will of the operator, all as will be hereinafter described, and pointed out particularly in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 represents a sectional elevation of my invention applied to a screw-jack, such as shown in Letters Patent No. 295,838, granted to me March 25, 1884. Fig. 2 is a top plan view of the same.

Similar letters of reference in the several figures indicate the same parts.

The letter A indicates the body or standard of the jack; B, the screw-stem or lifting-bar, and C the shaft which carries the worm-gear that engages with the thread of the screw-stem.

I have not deemed it necessary to show either the threaded portion of the screw-stem or the worm-gear, inasmuch as their construction and arrangement in this class of appliances are perfectly well known. A spur-wheel, D, is mounted upon and secured to the shaft C, and with its teeth are adapted to engage two spring-pawls, E E′, that are supported upon independent pawl-carriers F F′, respectively. Each of these pawl-carriers has a slotted or recessed portion, *f*, in which its pawl is located, and it also has two perforated short arms or lugs, f^2 f^2, that are hung loosely upon the shaft C with the gear D between them, one of the lugs of each carrier being immediately adjacent to the side of said gear, all as clearly shown in Fig. 2. Each pawl is preferably constructed in the form of a bell-crank lever and is mounted upon a pivot or cross-pin, *e*. It is double-acting in its operation—that is to say, one or the other of its arms e' e^2 is adapted to engage with the teeth of the gear D, according as it is shifted to one position or the other. A spring, G, is arranged upon each carrier in rear of its pawl, and has a wedge-shaped projection, *g*, at its outer end that is adapted to bear upon one side or the other of the angle formed by the back of the pawl and thus operate to normally hold one arm or the other of the pawl in engagement with the teeth of the spur-wheel. A stud or projection, H, upon the upper arm of the pawl serves as a means for setting the pawl in the position desired. To the lower outer portion of each carrier is articulated a link, I, and these links in turn are both articulated by a common bolt or pin, *i*, to the short end of a lever, K, pivoted by a stud or bolt, *k*, to the sides of the jack, and having a socket, *k′*, for the reception of the end of a long hand-lever or operating-handle, L.

The operation of the invention is as follows: When it is desired to rotate the shaft C to the right, which we will assume would cause an elevation of the lifting-bar or screw-stem, the the pawl E on the carrier F is shifted by means of its stud H, so that its upper arm, e', is pressed by the spring G into engagement with the wheel D, while the pawl E′ on the carrier F′ is shifted so as to cause its lower arm, e^2, to be also pressed into engagement with said wheel D. Now, if the hand-lever be vibrated up and down both carriers will be caused to rise and fall simultaneously, the pawl E operating to turn the wheel as they rise and the pawl E′ operating to turn it in the same direction as they fall, the result being a practically-continuous rotation of the shaft and a consequential lifting of the screw-stem without any lost motion on the part of the operator. To rotate the shaft in the opposite direction, it is only necessary to reverse the position of the pawls by means of the pins or projections H and operate the handle as before. The parts of this contrivance are very few and simple and are not all liable to get out of order. Should it be deemed desirable to protect the pawls and the gear-wheels with which

they co-operate, a simple casing or housing may be fitted over them, as will be readily understood.

While I have only shown my invention applied to screw-jacks it is obvious that it is also applicable elsewhere, generally, as a means for converting reciprocating into rotary motion.

Having described my invention, what I claim as new is—

1. The combination, with the spur-wheel and its shaft, of the two independent pawl-carriers hung loosely upon said shaft and the pawls mounted upon said carrier, substantially as described.

2. The combination, with the spur-wheel and its shaft, of the two independent pawl-carriers and their pawls and the links articulated at one end to the pawl-carriers and at the other to the handle-socket, substantially as described.

3. The combination, with the spur-wheel and its shaft, of the independent pawl-carriers hung upon said shaft, reversible pawls mounted upon said carriers, the pivoted handle-socket, and the links connected at one end to the pawl-carriers and at the other to the handle-socket, substantially as described.

4. The combination, with the spur-wheel and its shaft, of the independent pawl-carriers hung upon said shaft, the reversible pawls and their springs, the links, and the handle-socket, substantially as described.

5. The combination, with the spur-wheel and its shaft, of the independent pawl-carriers mounted loosely on the shaft and embracing the said spur-wheel, the bell-crank-shaped pawls having the projections or pins for shifting them, and the springs having the wedge-shaped projections on their ends, substantially as described.

ALBERT R. TIFFANY.

Witnesses:
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